Wildlife management conflicts in rural communities

Wildlife management conflicts in rural communities: A case study of wild boar (Sus scrofa) management in Ērgļu Novads, Latvia

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Abstract: Wildlife conflicts are often characterised by conflicts between groups due to an incompatible understanding of the management of the resource. Latvia has experienced an increase in wild boar numbers and associated damage due to improved habitat, caused by land abandonment and actions taken by hunting organisations to maintain boar populations. In Ērgļu Novads, an administrative district of Latvia where the damage is particularly intense, wild boar management is a contentious and emotive issue among different groups within the community. This study sought to investigate the ecological, economic and social dynamics of the conflict using qualitative interviews with members of different interest groups, conducted according to a conceptual framework developed by White et al. (2009) to analyse biodiversity management conflicts. Results showed high wild boar numbers, poorly written contracts between landowners and hunters and a lack of trust between various stakeholder groups, such as landowners, hunters and the authorities, causing conflicts, as well as a lack of effective dialogue preventing the elaboration of solutions. The study identified the need for all stakeholders, including the authorities, to listen more seriously to those most affected by the damage.

Introduction

Wildlife conflicts are rarely just conflicts between people and wildlife. These conflicts reflect disputes between social groups that have divergent interests in wildlife management, view the natural world differently, or have competing priorities over the resource (Cantrill 2011, Frank, *et al.*, 2015; O'Rourke, 2014; Redpath *et al.*, 2013). Wildlife conflicts have been described as situations where one social group exerts their influence in order to promote their interests in natural resources to the

detriment of other groups (White *et al.*, 2009). Such conflicts may pose threats to local livelihoods and cultures arising from "an incompatible understanding of natural resources" (Sjölander-Lindqvist, 2009:131).

This is the case in Latvia and elsewhere in Europe where increasing wild boar populations (Latvijas Statistika, 2014), have caused damage to crops and grassland leading to conflicts within farming communities *(Schley et al., 2008; Thurfjell et al*., 2009). Many factors contribute to the increasing wild boar populations: lower intensity land management, land abandonment, wild boar's adaptability to landscape change, milder winters, reintroduction of wild boar in some areas, winter feeding and the declining numbers and ageing of hunters (Massei *et al.*, 2014)

No simple solutions exist as these problems encompass diverse stakeholders with different management objectives, priorities, historical grievances and power imbalances. It is therefore crucial to understand how stakeholders relate to one another in order to address these issues (Glass *et al*., 2013; Sarkki *et al*., 2013; Stenseke, 2009). This is also important because these problems belong to a wider debate about future landscape changes in areas where rural societies are increasingly marginalised and struggling with outmigration, ageing populations and agricultural extensification (Ruskule *et al.*, 2013). One of the many consequences of these issues is an increase in wildlife populations.

Study aims and objectives

This study investigated the dynamics of an ongoing conflict between farmers and hunters over wild boar management in the area of Ērgļu Novads, a Latvian administrative district considered by the authorities to be a "hotspot" for wild boar damage (State Forest Service, official, Pers comm). Local farmers face many challenges in obtaining a sustainable livelihood due to poor land quality and severe winters; this is exacerbated by wild boar damage. The problem leaves many farmers feeling frustrated, helpless and at the mercy of hunters. The hunters are expected to control wild boar

numbers whilst, in the farmers' opinion, they enjoy sporting opportunities at the farmers' expense. The conflict has taken on the character of two opposing groups with contrasting paradigms set within a weak institutional and political context that is related to the slow rate of political development and a lack of meaningful public participation, still evident in former Soviet Union countries (Kluvánková-Oravská, *et al.* 2013).

The study's objective was to explore the ecological, economic and social dynamics of the conflict in depth, drawing out factors and indicators that could help to clarify and solve problems related to social dynamics and local power relations.

Theoretical Framework

Wildlife conflicts have become a topical issue in many European countries. Research has shown that incompatible understandings of natural resource management lead to disagreements among different interest groups (Buller, 2004). Re-introducing wildlife can threaten farmers' livelihoods, for example the re-introduction of wolves in Sweden and France (Ismael & Beltran, 2009; Sjölander-Lindqvist, 2009) or the support by hunters of wildlife populations such as wild boar, which are not endangered in Latvia. Research into the impacts of these interventions often focuses on ecological impacts or impacts on local communities and do not investigate the combined ecological, economic and social aspects (Redpath *et al*., 2013; White *et al.*, 2009). This is especially pertinent in Latvia where central elements of national identity rest on Latvia being a nation of farmers with a close connection to nature. The cultivated ethnoscape, however, where "primordial nature has never been celebrated" means the damage incurred by wild boar is inconsistent with the ideal of well-cultivated farmsteads (Schwartz, 2006:55).

Inequity between those who benefit from the resource and those who bear the expense is often the basis of wildlife conflicts (MacMillan and Phillip, 2008; O'Rourke, 2014). Those who can control resources in their favour have little incentive to reform their practices (Davies and White 2012;

Yasmi *et al.* 2006); this is especially true in cases of game animals, where management activities on one property frequently affect neighbouring properties (Davies and White 2012). However in Latvia, many landowners are forced to rely on hunters to manage wildlife populations on their own properties due to inadequate regulations (explained below); this results in a conflict of interests and a lack of incentives for hunters to reform their practices. This poses a problem, as successful wildlife resource management requires functioning co-operation amongst diverse rural groups and various agencies (Davies & White, 2012; Yasmi et al., 2006).

Several authors have identified the need for more sustainable and equitable natural resource governance, which involves moving from governance through top-down regulatory means to a wider community involvement in the decision-making process. These authors emphasise the need to include "reflexive and collaborative engagement" of stakeholders (Davies and White, 2012; Gerner *et al.*, 2011; Glass *et al.*, 2013). This would improve understanding, assure legitimacy within the affected communities and improve decision-making. These studies focused on wildlife conservation issues and disputes between conservation bodies and/or experts and the local population. In this Latvian case, however, the issue is primarily a conflict between stakeholders acting at the local level (both permanent residents and second-home owners), set in a context of inadequate regulatory support and regarding a species of non-threatened status.

Authors identified disincentives for reform including lack of trust, fear, unwillingness to engage or compromise, bureaucracy, inflexible legislation, unrealistic world views, lack of transparency and stereotyping of other stakeholders as "stupid" or "uneducated" (Davies and White, 2012; O'Rourke, 2014). These issues are common in ex-Soviet countries, where trust is an issue and people are unused to cooperating with the authorities (Storie, *et al*, 2013). Ignoring values and attitudes of other stakeholders hinders both communication and the integration of local knowledge into policy decision-making (Davies and White, 2012; Glass *et al*., 2013; Stenseke, 2009), leaving stakeholders feeling less important than wildlife (Buller, 2004). This is exacerbated in ex-Soviet countries where institutions have struggled to adapt their hierarchical structures and develop more

inclusive governance styles, and yet, sometimes are overwhelmed by the transition process (Kluvánková-Oravská et al., 2013).

Sarkki *et al* (2013) identify the need to develop a shared understanding of a problem, using a common language where issues are discussed. Skilled facilitators can also bridge the gap between experts, the authorities and local stakeholders, and support marginal stakeholders ensuring their knowledge is recognised and their experience is taken into account (Madden, 2004; Sarkki *et al.*, 2013).

Policymakers need to accept a range of scenarios that embrace "uncertainty, complexity and diversity" (Sarkki *et al.*, 2013,:189). As Redpath *et al.* (2013) argue, policymakers should devise flexible legislative frameworks that enable the development of local solutions. Complex conflicts require analysis to discover causes and to predict possible future problems (Gerner et al., 2011; Young, Watt, & Carss, 2009); monitoring of actions then helps to prevent new problems arising (Niemelä *et al.*, 2005). As Yasmi *et al.* (2006) explained, it is better to deal with conflicts early than allow them to escalate.

The literature demonstrates how wildlife conflicts are set within a complex web of beliefs, perceptions and economic conditions, with different social groups demonstrating varied experiences and understandings of natural resources, ecology, landscape dynamics and rural economics (Glass *et al.*, 2013; Sarkki *et al.*, 2013; Stenseke, 2009). Ecological understanding of the consequences of various management techniques is essential, as this will frame the range of alternative solutions (White *et al.*, 2009). Reliance on technical solutions alone, however, can exacerbate conflicts if the different groups feel alienated from the decision-making process and especially if unfamiliarity with technical language is confused with a lack of expertise (Frank *et al.*, 2015; Sarkki *et al.*, 2013). Both negotiated agreements and technical solutions are therefore necessary (Davies, *et al.* 2013). Authors argue that conflicts need to address the stakeholders' roles, their perceptions and use of

resources; combining the social and natural sciences should, therefore help in the understanding of the complexities of a conflict (Frank *et al.,* 2015; Redpath *et al.*, 2013; White *et al.,* 2009).

Conservationists and wildlife experts are of the opinion that an interdisciplinary approach should correct "previous imbalances between different perspectives" (White *et al*., 2009:241). In addition, White *et al*. (2009:243) highlight the need for an "integrated, conceptual, yet functionally applied approach" to identify indicators that allow the development of conflicts to be monitored over time. The framework of White *et al.* (2009:244) (figure 1) is based on three different schools of thought, "ecological population dynamic theory, economic optimisation models and attitude-behaviour and social cognition theory". These theories highlight the social, economic and ecological factors that influence stakeholder decision-making and their consequent behaviour, as well as the wildlife impact on communities.

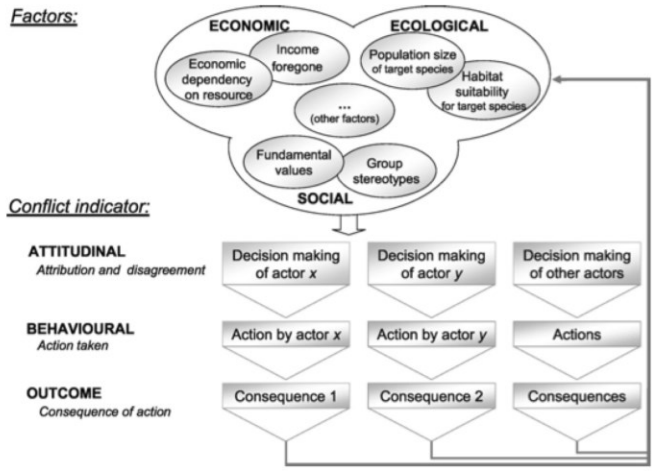

Figure 1: White et al. (2009) framework developed to analyse wildlife-human conflicts. The framework includes the social, ecological and economic factors that can lead to conflict.

White *et al.* (2009) argue that integrating social factors into the ecological and economic framework strengthens the analysis, as social factors are rarely considered in in multi-disciplinary studies of environmental concerns. Conversely, incorporating ecological and economic factors into sociological research will help in developing achievable solutions set within the limitations of the ecological boundaries. The framework draws out the dynamics of the conflict in terms of beliefs and

values regarding relationships between stakeholders and about wildlife and their management. It describes how stereotyping prevents the understanding of each other's attitude and behaviour. The aim of the framework is to stimulate the exploration of a variety of factors and their interplay and "to encourage and organise diagnostic and descriptive enquiry" (White *et al*., 2009:245). In this study the framework was used to develop interview questions, ensuring that important aspects of stakeholders' lives were included, and to identify actual and potential, stated and hidden areas of conflict. Themes leading to conflicts, for instance divergent understandings, conflicts over resources or differing cultural understandings, with the resulting attitudes, behaviour and outcomes are identified. This study sets out to assess if the wildlife conflict analysis framework developed by conservationists is useful when applied to conflicts about species of non-threatened status that was not introduced by a conservation group.

The case study area

Ērgļu Novads (Municipality) (Figure 2) is a Latvian government unit in the upland Vidzeme region. It is a sparsely populated area with a hilly terrain, a mosaic land cover pattern, pastoral and small-scale arable agriculture, forest, wetlands, lakes, small villages and scattered farmsteads (Latvijas Statistika, 2014). Farming and educational establishments constitute the largest local economic sector and, although challenging, farming constitutes the main or a significant source of income for many residents. Hunting is a popular local activity, but there are no professional hunters in the area.

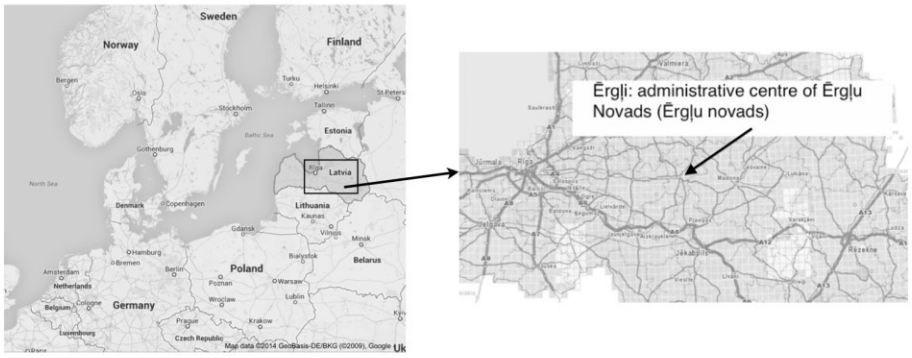

Figure 2: Ergļu Novads is an administrative district, approximately 100 km east of the capital Rīga

During the Soviet era farms were managed under the *kolkhoz* (collectivised) system. Landowners were forced to move from their land into new villages (or deported if they did not cooperate) (Schwartz, 2007), severing "the primordial roots of their identity as Latvians" (Schwartz, 2007: 275).

> "[T]he shape of rural life was profoundly transformed. The intimate relationship of the *saimnieks* [owner or manager] to his *vienseta*, [farmstead] in which exploitation and beautification were harmoniously balanced—the *Indrani* relationship [a nationally revered play based on rural Latvian life]— was replaced by the vast scale of collectivized agriculture" (Schwartz, 2007:270).

Upon independence "the *vienseta* was rehabilitated as the defining element of the Latvian cultural landscape" (Schwartz, 2007:283) and land was returned to native Latvians (Ruskule *et al.*, 2013). "Politicians and government officials, too, emphasised closeness to nature in their constructions of Latvia's restored national identity with the emphasis on Latvians becoming 'the *saimnieks* of his own land!'" (Schwartz, 2007:284). Still, many farms have been abandoned since independence, which led to secondary forest formation. The complex landscape of irregularly shaped forest patches with long forest edges provides the wild boar with an ideal habitat and cover. The traditional open field system without hedges, walls or fences, allows wild boar to move easily into fields to dig up the grassland for roots and grubs, a problem for the remaining local farmers (Bell *et al.*, 2008; Raadik and Cottrell, 2007).

Hunting, meanwhile, has deep roots in the area's cultural traditions and offers opportunities to socialise (State Forest Service, official, *pers. comm.*). The Ministry of Agriculture sets hunting policies, but the State Forest Service implements the regulations. Hunting organisations enter into contracts with several local landowners to attain the required minimum area necessary to obtain hunting quotas, currently 1000ha for wild boar. If the relationship with the hunting organisation

breaks down, a landowner may be left without the ability to hunt on his own land or have any other hunting organisation hunt there.

Methods

Semi-structured interviews with a number of stakeholders formed the basis of the research. White *et al*.'s framework (2009) was used to develop the questions and structure the subsequent analysis. The interviewees were drawn from a broad range of stakeholders involved at different levels, from national institutions influencing the issues to those acting at the local level. The aim was to allow the interviewees to talk freely without prompting or leading questions and to explore how understandings overlapped and diverged between and within stakeholder groups. Documentary evidence, such as websites, newspaper reports and government documents were used to validate the information where appropriate. Field visits to observe damage first-hand were made.

Subjects were reached using the snowball method and convenience sampling (Marshall, White, & Fischer, 2007; Sjölander-Lindqvist, 2009). Twenty-five interviews were conducted between December 2011 and February 2012 (23 interviews were conducted with one person present, one interview with two and one with four). Interviewees were a Ministry of Agriculture representative, two State Forest Service representatives (one at national and one at regional level), one local authority representative, one national farming representative, local farmers (16 who derived some or all their income from farming activities; five held hunting licences. Only two were members in active hunting organisations), two landowners derived no income from their land but growing produce for their own consumption and five hunters (two hunting union heads, one journalist and two at local level not deriving income from farming activities). Landowning interviewees included both long-term residents and recent incomers and represented different farming sectors: meat, dairy production, goat rearing, mixed farming, a combined sheep farm and camping/conference centre, and subsistence farming. The hunters represented three of the nine local hunting organisations, covering between 4,500ha and 13,000ha of territory, with most based locally. Only one was a city-based weekend hunter.

Interviews were all face-to-face, except for one conducted via Skype. All but three interviews were recorded; when not recorded, handwritten notes were taken. An English researcher, resident in Latvia for four years, carried out the interviews, which were conducted either in English or in Latvian. Local English speaking people were employed as informal translators where necessary, which helped to gain trust. Recorded interviews were then transcribed and analysed using Text Analysis Markup System (TAMS) version 4.45b4ah (Weinstein, 2013) and coded to identify themes emerging from answers to questions related to the White *et al*. framework.

Results and discussion

The interviews revealed that the following themes were the most prominent in the conflicts:

- Different understanding of the wild boar's role in the environment,
- How wild board should be managed.
- Costs and Benefits
- Relationships in Crisis and
- A Soviet legacy

The following sections discuss these themes in more detail, explaining which concerns they entail and how they relate to the framework of White *et al*.

Theme 1: Divergent understandings

Following the interviews, it emerged that the understanding of the wild boar's role differed between and within stakeholder groups. In more detail, this related to ideas about the wild boar's role as a part of nature, and ideas about acceptable densities of wild boar.

Wild boar as part of nature

The farmers interviewed were generally sympathetic to environmental issues. However, they were also concerned about the impact of wild boar on local habitats, such as rare flower meadows, which benefit from the traditional hay-cutting cycle. Farmers also reported reductions in ground nesting birds, ants, forest berries, and mushrooms as "the forests are all dug up". They stated that wild boar ate "just about everything" and claimed they raided bee hives, rabbit hutches, orchards and gardens that farmers use for personal consumption.

"Wild boar are part of the natural chain but they have spread so much that they are damaging nature." (Local farmer)

Farmers stated that wild boar started to behave like domestic pigs, without fear of humans, their dogs, or scaring devices, such as firecrackers, soiled baby's nappies, wolf urine spray and bird scaring devices. "We tried everything and we haven't any more ideas," said another local farmer

Various farmers felt as if they were blamed for not protecting their own land, although they tried to do so using many strategies yet with little success. Many farmers considered stock-proof fences culturally unacceptable. Some hunters indeed blamed farmers for being lazy and not protecting their fields properly. One hunter explained that farmers could have prepared better as conflicts with wild boar were to be expected in a mosaic landscape with a sparse population.

"Mostly people prefer living with forests, with fields and this is territory of wildlife too and if you want to save something in your territory from animals: Sorry! You must do something to protect your fields, your potatoes."

A contested issue, often raised, concerned the hunting of wild boar sows with piglets. Hunters had ethical objections to shooting them whereas others believed it would quickly reduce numbers. A

national hunter explained, “If you shoot a piglet, she [the mother] will move her piglets away for safety; if you shoot the mother then the piglets will scatter and be more of a nuisance.”

Hunters had the idea that they were supporting the balance of nature when feeding wild boar over winter, particularly when snow is deep, by selectively culling young and sick animals, and by not hunting mothers. One hunter even believed that numbers could increase without damaging the environment.

The authorities recognised damage to individual farming property as an issue. A State Forest Service official also recognised the need for moderate hunting to reduce wildlife conflicts.

"If a species is totally protected from generation to generation, they change their behaviour. They lose their fear of people, they come to human settlements more and more and potentially they are doing more damage. But if a species is moderately hunted, it somehow keeps the [distance between] animals and wildlife and humans”

Likewise, a local official argued that if farmers were allowed to shoot wild boar on their own property, the boar would become afraid of people.

The two main stakeholder groups, farmers and hunters, held different paradigms regarding nature and the place of wild boar. Both groups were knowledgeable about various aspects of the wild boar’s ecology, but neither had the complete picture. For example, farmers correctly identified the issue of wildflower meadow impact (Humbert *et al.* 2009) and the lack of efficacy of fencing as a preventative measure (Schley et al., 2008), but hunters correctly identified shooting mothers as an issue. As Sodeikat and Pohlmeyer (2003:48) state “the social structure of a wild boar group must be maintained by preserving the leading sow” to prevent the group breaking up and dispersing over a wider area. Also insisting wild boar mothers be shot may risk alienating the hunters, Arriving at a common understanding of these questions can decrease the intensity of the conflict but this

requires effective dialogue, which again requires trust and a readiness to listen and understand each others' viewpoints.

How many wild boar are enough?

Farmers and hunters had different views on the issue of acceptable wild boar numbers. Farmers preferred well-managed pastures and forests (according to their perception of how the Latvian countryside should be), but hunters preferred to see thriving, abundant, healthy, wild boar populations as this would be the most suitable for hunting purposes. Stakeholders had clearly different perceptions and expectations of the rural environment based on their interests and their own experiences. These are not necessarily based on scientific understandings of ecological resources, since local stakeholders do not have easy access to scientific data to support their views. The experience of damage and their views on the place of wild boar in nature helps to explain why farmers see the need to reduce wild boar numbers whereas hunters see little reason for the reduction in numbers.

Though farmers who suffered extensive damage blamed hunters for inadequate hunting, many hunters blamed farmers for poor land management. They claimed farmers were not removing hay, but leaving it on the ground for prolonged periods, which encouraged invertebrates to surface and attracted wild boar. They also complained that maize grown for biogas, equated to "pig heaven" and resulted in high numbers and extensive damage. On the other hand, weather changes might leave farmers no choice except to leave hay in the field, which added to misunderstandings between the two groups.

Some hunters believed quotas set by the State Forest Service were too low and were responsible for the high numbers, rather than the actions of hunters themselves. Both farmers and hunters believed that wild boar were clever animals, and one local official wryly stated that, since hunters were coming

at weekends, when they are free from work, “Those wild boar would come all other days”. She also explained “It is more a hobby and not a responsibility”.

Wild boar herds were seen as particularly numerous by farmers with one saying: “In one family there are 80 or 100 and that’s not normal.” Wild boar were reported as coming within 50m of homes; one farmer reported wild boar coming to the front porch:

“In my childhood, my mother said, ‘Somewhere in the forest are some forest pigs and I would like to see some, because you can never see them’. But now you can see them quite often, they are coming next to the house.” (Local farmer)

One landowner noted that damage was high in the 2011/2012 winter season due to the “soft autumn”. A thin layer of snow covered the unfrozen ground, meaning wild boar continued to dig throughout winter. Destruction patterns were variable throughout the study area; for instance one large landowner stated that he suffered little damage because hunters responded quickly to reports of wild boar activity whereas smaller landowners reported hunters to be unresponsive.

“The perfect life for a hunter would be if the forest was full of wild boar, but that is really damaging for farmers…But the perfect life for farmers would be if there were no wild boar at all, so there wouldn’t be any damage on their field and so we have to think together how to manage what they [the farmers] want.” (National level Hunter)

Divergent views between farmers and hunters also emerged regarding the ecological carrying capacity of the landscape. A ministry official suggested that wild boar numbers might be two or three times too high but at the same time there was little exact information about how many there actually were. More accurate population estimates by the authorities – and thus appropriate hunting quotas - would be beneficial, as it would give an accurate picture to both farmers and hunters and present scientific evidence for setting population levels (Gortázar *et al.*, 2015). Calenge *et al*. (2004)

suggest that supplementary feeding should cease in high population densities greater than 15 animals per 1000ha of forest, as in this Latvian case,. Phasing out supplementary feeding is recommended, unless it is the animals' primary food source to avoid starvation among the boar population or locally intensified damage (Conover 2002:280). High numbers are a good indicator for more intense conflicts to occur given the risk of higher damage.

Theme 2: Wild Boar Management

Stakeholders differed in their view on how to manage wild boar with differences of opinion on suitable strategies and clearly conflicting priorities between the groups involved.

Prevention strategies

National authorities and hunters suggested various strategies and methods, such as bird-scaring devices and fences to prevent wild boar damage. Farmers considered these ineffective and expensive and were reluctant to undertake a major expenditure to secure their properties with no guarantee of success. Some farmers were adamant that permanent fences were unattractive and restricted wildlife, demonstrating concern for the impact on wildlife movements. One local official was worried that stock-proof fencing would visually impact the area and affect tourism. Some considered electric fencing an acceptable alternative to permanent stock-proof fencing, as it is less visually intrusive.

To feed or not to feed

Opinions differed about the volume of feeding between hunters and those farmers suffering extensive damage. Farmers placed the blame on hunters for high wild boar numbers and the resulting damage to fields. They believed feeding the wild boar made them "very lazy" but local hunters claimed 80% efficacy in distracting wild boar from rooting in fields. Yet hunters also differed in their opinion on feeding. Some hunters disagreed with feeding except in winter when feeding was

considered necessary in order to keep the animals alive, as overfeeding would, contribute to "boar increasing like rats". Within the study area hunters from three hunting organisations considered winter-feeding to be necessary, with one hunter favouring continuous feeding. A hunter at national level explained, the "geographical position of feeding is important", emphasising that hunters must place feed away from fields to reduce damage to fields.

Disagreement over feeding was a strong contributory factor to the conflict according to many interviewees. As Buller (2004) highlighted, the distinction between wild and domestic animals is becoming increasingly blurred, especially as boar lose their fear of open spaces and habitation. Damage is no longer confined to the forest edge due to winter-feeding by hunters to protect wild boar numbers. Studies indicate the consequences of long-term feeding are increased populations, and is thus an indicator of a future risk of increasing conflict (Geisser & Reyer, 2004; Gortázar *et al.*, 2015).

Theme 3: Wild boar's presence: whose benefits and whose costs?

Farmers and hunters had differences in opinion related to strongly polarised views on the unequal distribution of costs and benefits. Farmers were quick to highlight economic costs of lost production and costs of repairs to damaged fields and machinery. One local official commented:

"For farmers who produce meat and milk these are serious losses because they need to rework their fields, replant, level out the holes, they have to look for hay elsewhere, so they really have economic loss, they suffer the most."

Farmers reported losing European Union subsidies or even being fined for not fulfilling their stated objectives due to damage caused by the wild boar, which a local official described as a "painful thing". One farmer was fined after boar dug deep holes that were considered dangerous for workers and machinery; instead the field was used for grazing, with cattle eating what was left. Costs noted

by interviewees included lost opportunities to grow American cranberries, strawberries, different grains, fodder beet, bees and potatoes for commercial use, in summary, all crops farmers would like to grow, but considered too high an investment risk with wild boar present in the area. One farmer stated he no longer raised his own crops due to the wild boar, "because half an hour after the tractor has worked on the field the wild boar comes to see what has been put on her table". Another explained that he had lost a maize harvest to wild boar.

Interviewees reported that rooting behaviour by wild boar seriously hindered farming, as it was difficult to plough or harvest badly degraded land. Holes were difficult to see in long grass and unearthed stones could damage tractor-mounted or towed equipment (Figure 3). Some farmers complained about widespread grassland destruction, a fact validated by a field study conducted by one of the authors (Storie, 2012) One farmer reported that 60 to 70 per cent of his land was damaged by wild boar. Not all farmers owned agricultural machinery and, hence, faced additional costs when hiring help for restoring the land, for buying extra seed and paying for repairs to damaged machinery. The degradation of the land meant some farmers reduced stocking levels, whilst others rented land up to 5 kilometres away to produce enough hay for their needs.

Figure 3: Wild boar damage can range from small holes excavated to find roots to large, extensive damage. a) shows damage to a meadow just prior to hay cutting, b) shows damage that exceeds 50 cm in depth and c) shows extensive damage to a field in one night

Moreover, farmers reported increased contaminants, such as wild boar faeces and soil baled with the grass, rendering it unfit for animals and increasing the risk of disease and parasitic infections; one farmer blamed wild boar for the presence of *Listeria* on his farm. They also reported reduced hay

quality due to invasive weeds, such as burdock (*Arctium*), sedges (*Cyeraceae*) and ground elder (*Aegopodium podagraria*). One farmer stated, “Cows cannot eat that”.

Farmers expressed their concern about loss of produce raised for personal use in addition to the commercial losses. One farmer could not move her garden, located in the same place for many years, as that would require new expensive fencing materials, “and without a fence there is no meaning”. Produce raised for personal use made an important contribution to the national food safety net, as one local official explained:

“Now we are in this position [of economic crisis], people are trying to raise plants here, to garden, to raise something to eat, even for their grandchildren in the towns to give away and now they can’t do that.”

When questioned about his attitude towards wild boar, one exasperated farmer stated, “More work! More money! More time!” but generally the attitude was, “As long as they don't bother me and stay in the forest, then that is okay.” Some agricultural workers, however, were afraid, when wild boar appeared, with some running away from their cattle or goat herds and some carrying firecrackers to frighten wild boar off. When interviewees were asked if the wild boar brought any benefits to the local area, one local farmer summed up the feelings of many, “What benefits? Maybe some hunters have some benefits, but for me there is only damage”.

A local official explained that whilst local hunting organisations did not pay any taxes to the municipality, shooting competitions attracted people from other parts of Latvia with local hotels benefitting from foreign hunting groups. Hunting also provided meat for people both locally and further afield; one local hunting organisation sold meat to a restaurant in Riga, the capital and to a wild game dealer. Farmers, however, complained that they continued to pay taxes on fields they cannot use.

A ministry official was concerned not to alienate the volunteer hunters but admitted that city residents lacked an understanding of rural inhabitants. “Managing wildlife is in the hunters’ interests” but their interests and the farmers “are clashing” in some areas, particularly Ērgļu Novads. Costs were being borne by farmers, whereas hunters were benefiting from the high wild boar numbers. For instance, farmers reported up to 60 to 70 per cent damage to their fields, whilst hunters could enjoy abundant sporting opportunities. Contracts written in the hunters’ favour, however, meant there was little incentive for them to reform their practices.

The literature suggests that costs resulting from wildlife damage are unevenly spread amongst all stakeholders (MacMillan and Phillip 2008; Conover 2002:360), which appears to be the case here. Farmers worried about the economic aspects of the dispute, however, they also were distressed because they had the opinion that they were not being taken seriously by the authorities and the hunters, which also fuelled the conflict. As Körppen *et al.* (2008:26), argue the acknowledgement of historical grievances is “an important precondition for any sustainable peace process”.

Also, cultural attitudes need to be considered when devising options for farmers to protect their land. Latvians prefer the traditional open countryside without hedges and fences, which potentially reduces options available for landowners (Bell *et al*., 2008).

The rising incidence of disease amongst wild boar is a significant problem too (Gortázar *et al.*, 2015; Kasjauns, 2012). Literature clearly indicates that wild boar are a reservoir for disease; therefore monitoring is necessary especially in high density populations with a younger age structure (Artois *et al*., 2002). It is important for hunters to be aware of control methods during disease outbreaks, for instance high intensity drive hunting risks dispersing populations, which poses additional problems. This could increase the intensity of the conflict even more unless the authorities react appropriately (Gortázar *et al.*, 2015; Scillitani, *et al.* 2010).

Theme 4: Relationships in crisis

This conflict is not only caused by wild boar damage but is also due to the strained relationship between farmers and local hunting organisations; their perception of the landscape, the environment and their respective management roles also differs. These strained relationships are also set within a framework of inadequate regulatory support. In one area hunters and farmers had stopped talking and farmers felt humiliated and intimidated by the hunting organisation. In other areas dialogue between hunters and farmers was under strain. Farmers often perceived hunters as uncaring and only interested in "looking after themselves" as well as arrogant and uninterested in understanding the situation of farmers. Farmers complained that hunters were doing "a bad job", "won't stay long enough to protect the land" and were unresponsive to farmers' calls for help, "They don't really come, they don't do anything about it." Although a national level hunter admitted that arrogance and disinterest were major problems among hunters, she also indicated that, "Slowly the attitudes are changing".

Some hunters felt hated by local farmers and were tired of being "screamed at" for something they did not feel responsible for, arguing they were maintaining the balance of nature. Both groups felt strongly about these conflicts, as a national level hunter noted, "The wild boar conflict is a highly emotional issue,"

Hunters considered hunting a traditional activity that offered an interesting sporting pastime and healthy meat. It was also a voluntary activity with hunters mainly active at weekends and holidays. For farmers hunting worked well, when hunters responded quickly to damage, and were living locally

The present case demonstrates that differences in opinion between stakeholder groups concerning nature and landscape management undermine the relationships between stakeholders; it feeds mistrust and renders the development of an effective dialogue about how to solve the problem very difficult. In such cases mediation that addresses power imbalances is required, as numerous

authors have suggested (Madden, 2004; White *et al.*, 2009; Young *et al.*, 2010).Solutions are also difficult to find because the principal means of controlling the wild boar population, hunting, is a voluntary activity.. Despite contracts between landowners and hunting organisations, it is difficult to force hunters to undertake control measures when required by farmers. Legislation hampers farmers in taking alternative action and the slow response of the authorities increases farmers mistrust of them (Young *et al*., 2009). The subsequent changes in the law pass the responsibility from one authority to another without resolving the local situation.

Theme 5: A Soviet Legacy and Governance difficulties

The historical context of the conflict is not directly related to the natural resource therefore, it is not explicitly accounted for in the theoretical framework. However, in this case it is clearly relevant as the management of the problem changed substantially during the transition process to an independent Latvia.

In the Soviet times, land was managed within the *kolkhoz* system and hunting was organised in 5000ha blocks; wild boar was hunted for local consumption and other game species for export. Post-independence, the *kolkhoz* system was dismantled and land privatised. Land was returned to the previous owners or their descendants and became private property. Wild boar are hence, no longer affecting collective kolkhoz land but obtaining food from the farmers' private fields or gardens. Losses thus became personal losses.

Hunting rights passed to the landowners but as the average property is approximately 10ha (State Forest Service Personnel), in practice contracts with hunting organisations are needed in order to obtain quotas for shooting game. The legal requirement is 1000ha of land for managing wild boar. During the transition period it was felt that many hunting organisations exploited people who were unfamiliar with contracts. As a ministry official explained few understood the system then; hence contracts were often for life with no recourse for landowners in the event of disputes. Farmers often

stated that they needed the right to protect their own land and were tired of fighting the authorities over the situation - a situation the authorities admitted had been continuing for a long time with the promise of legislative changes.

“Those ministers, they don’t really care at all how the farmer lives or about their living. That is the problem here.” (Local farmer)

Inadequate regulatory processes have been an issue ever since Latvia became an independent democratic state. A State Forest Service official explained that compensation laws existed but to his knowledge none had ever been paid. Farmers had to take steps to protect their fields but the protection required was not defined. Consequently, farmers felt helpless and believed that regulations were working against them. As a ministry official admitted, “You are like a hostage, you have no chances” and a local official described the situation as a “losing place”, a situation that farmers could not address themselves. Under the new law (2014) a local commission was formed to deal with issues concerning wildlife damage but this only appeared to give farmers a forum they can turn to, perpetuating the dependence on state mechanisms, a mind-set established during the Soviet era.

Communication is also an important issue in a country unused to two-way communication between the authorities and the people. At the time of the study a public debate was organised to discuss the role of hunting in wildlife management but farmers seemed either unaware of the debate or felt unable to participate, some refusing to sit in the same room with hunters from one specific hunting organisation (according to a national hunter). A ministry official hoped that legislation would solve the arguments over differences in managing wildlife.

Lack of trust is a major legacy of the Soviet past too. As mentioned earlier, farmers distrusted State Forest Service personnel, accusing some of corruption, and the authorities of favouring hunting organisations. State Forest Service staff members were also accused of actively hampering efforts

of local farmers to deal with their situation, for example by not submitting forms correctly, if at all. Some farmers complained that they were obstructed in developing their own hunting organisation, A hunting journalist explained, however, that State Forest Service personnel are facing understaffing following budget cuts, which further hinders their ability to deal with wildlife conflicts. The authorities expressed that they had little trust in farmers and did not feel comfortable about giving them the responsibility for shooting wild boar on their property as they believed that they would decimate the wild boar populations, a view farmers disagreed with.

Historical backgrounds to conflicts are important and in this case explain some pre-conceived notions among stakeholders that influence group interactions. It also explains some of the cultural conditions and expectations surrounding public involvement in local decision-making and land use management.

All interviewees were old enough to remember living under the Soviet regime, where dissent was discouraged and potentially dangerous, leaving many Latvians with difficulties in solving disputes, in opening themselves up to others, trusting authority or acting together. Latvians rarely express united resistance against the authorities and tend to feel helpless and hopeless when confronted with what they perceive as indifference from the state (Storie,*et al*, 2013). For some farmers this sense of helplessness is a reason to seriously question whether to carry on farming, because of the economic harm and deteriorating quality of life caused by wild boar damage (Skogen and Krange 2003). This is a problem, as rural communities need farmers to stay viable (Bell *et al.*, 2008; Ruskule *et al.*, 2013).

After the Soviet Union fell, newly independent countries had to adapt rapidly to implement laws and hastily drafted and unclear rules and regulations have since proved to be a hindrance, as is also the case here. The Soviet system had no participatory mechanisms and imposed top-down management decision-making, and after the collapse of the Soviet regime under-resourced authorities have struggled to develop novel, participatory governance approaches (Kluvánková-

Oravská *et al.*, 2013). Reliance on legislation, however, is counterproductive for solving human-wildlife or inter-group conflicts where frameworks to build effective dialogue are needed (Redpath *et al*., 2013)

Usefulness of the analytical framework

The framework White *et al.* (2009) developed was developed to analyse conflicts between conservationists and local stakeholders ; it is, however, also useful in this case of conflict over wild boar management in Ērgļu Novads, a conflict over a non-threatened species between local stakeholders set within an inadequate regulatory context. Table 1 describes the relationship between attitudes, behaviour and outcomes such as related to the framework. The framework provided a broad base for questions, covering the ecological, economic and social aspects of the dispute and supported the analysis of contributory attitudes and behaviours by examining how individuals and groups perceive and utilise resources. Whilst the framework did not refer to the historical context, this proved to be important in this case, and was referred to many times in the interviews. The framework also highlights how the social factors of the conflict and possible management solutions are set within an ecological framework that sets limits to the solutions possible.

Effective Dialogue

As noted earlier, mechanisms for effective dialogue are needed. Madden (2004) explains that external facilitation is required when local expertise in human-wildlife mitigation is absent, where conflicts are adversarial and trust is lacking; it is also needed in complex situations and in areas where a break down in communication exists between stakeholders. Young *et al.* (2009:8), moreover, argue that independent, trusted facilitators are needed in cases where some stakeholders are on an unequal footing with other stakeholders. The present Latvian case fulfils all these conditions.

Table 1: *The attitudes, behaviour and outcomes of farmers, hunters and the authorities to the various issues raised over wild boar management*

Divergent understandings	Farmers	Hunters	Authorities
Attitudinal: Attribution and disagreement	Wild boar numbers high, bad for nature and unafraid of humans	Higher numbers are good for sport and an important part of nature	Wild boar numbers are high
	Hunters not hunting enough		Farmers and hunters lack the expertise to make decisions on wild boar management
Behavioural: Action taken	Calls for a reduction in numbers and supplementary feeding to cease	Feeding of wild boar to maintain numbers and condition	After seven years brought lobby groups together to debate the issue
	Different but ineffective preventative actions taken		Law changed: farmers to write to the local authorities to request solution to the issue.
Outcome: Consequence of actions	Increasing frustration and feelings of hopelessness regarding the situation	Feeling under pressure for, in their opinion, supporting the natural environment	Farmers now deal with the local authorities and thus local power relationships

Conflicting Priorities	Farmers	Hunters	Authorities
Attitudinal: Attribution and disagreement	Wild boar are ruining pastures, bringing high costs and increased risks to investments	Wild boar hunting a sport but hunting mothers unethical	Small-scale farming low priority
	Blame hunters for feeding wild boar	Wild boar part of nature requiring nurture and believe feeding is an effective deterrent to prevent damage to fields	Authorities blame poor contracts, local farmers and local hunting organisations
	Believe hunters should shoot mothers	Blame farmers for poor land maintanance and unprotected property	

Table 1: *Continued*

Conflicting Priorities	Farmers	Hunters	Authorities
Behavioural: Action taken	Complaints to the authorities and hunters	Feeding wild boar to maintain numbers and condition Young and trophy specimens are shot	Lack of action to the issue initially
Outcome: Consequence of action	Poor relationships	Poor relationships	Slow response Unwillingness to change the law until farmers went to Court of Human Rights
Soviet Legacy	**Farmers**	**Hunters**	**Authorities**
Attitudinal: Attribution and disagreement	Look to the authorities to change the situation	Lack of trust in farmers	Reliance on legislative solutions and a lack of understanding of participatory techniques
	Lack of trust in the authorities and the hunters with allegations of corruption	Taken advantage of lack of understanding of contracts	Lack of trust in farmers or hunters
Behavioural: Action taken	Complaints but also acquiescence	Active participation in the debate on wildlife management by those with influence	Slow response and reliance on finding a legislative solution
Outcome: Consequence of action	Lacking skills to challenge the authorities	Stalling of the solutions at local level due to change in law	Shifting responsibilities from one organisation to another Not listening to the local farmers

The range of possible solutions that are acceptable for both stakeholder groups is limited due to the divergent understandings and differences in opinions regarding the role of wild boar in nature and their management. The farmers regarded the populations as too high and harmful for nature, thus

calling for reduced numbers, whilst the hunters wanted to maintain the present numbers and therefore felt they needed to protect and nurture the wild boar. Hunting is the most effective means of preventing damage, but the relationship breakdown between hunters and farmers is a problem where farmers rely on the efficacy of hunting to control wild boar populations (Bieber & Ruf, 2005; Geisser & Reyer, 2004). Proper evaluation of alternative methods is still required, (Månsson *et al.*, 2011) so farmers and hunters can receive the best possible advice and not have to rely on unsubstantiated opinions.

Expertise in human-wildlife conflict mitigation was not available locally and the farmers did not believe that the legislative reform addressed the local power imbalances. Even though legislative reform, with enough room for manoeuvre in local situations, is helpful (Stenseke, 2009), further steps need to be taken to include the locally affected stakeholders in a meaningful way and to tackle issues of power whilst also developing strategies to address issues. Political and legislative regulatory mechanisms alone are insufficient to deal with local issues and can even lead to conflict (Davies *et al., 2013; Niemelä et al., 2005)*.

Reliance on legislative reform and a lack of local expertise in conflict mitigation are both legacies of the bureaucratic Soviet era, as is the high degree of mistrust. Few of the local interviewees had any confidence in national level discussions or the open debate on the role of hunting in wildlife damage mitigation and yet paradoxically expected the government to do something. The Soviet legacy of secrecy, mistrust and top-down management lingers in the minds of many, an indicator of a systemic issue, despite the demise of the Soviet Union over 20 years ago.

Where trust is low, transparency is needed, with information relayed to local areas and stakeholders involved in the process (Niemelä *et al*., 2005). As Stenseke (2009:210) argues, the authorities need to listen to past local grievances of "perceived oppression", as well as present issues. She also argues that local stakeholder participation needs to be thought of as an "evolutionary product", where skills and networks are built over time. It should not be seen as just a time-consuming and

costly exercise, because it deals efficiently with issues at a local scale (Stenseke 2009:221 and 215). Meanwhile other authors stress the importance of mediation professionals to manage the conflict in developing local solutions (Davies and White, 2012; Redpath *et al*., 2013; Reimoser and Wildauer, 2007), with active steps taken to demonstrate that corruption, another feature from Soviet times, will not be tolerated (Marshall *et al*., 2007). State Forest Service staff require training in communication skills and facilitation (Conover 2002: O'Rourke 2014).

Madden (2004) recommends facilitation in areas of communication breakdown. This is actually the case here where because of perceived threats and lack of understanding, farmers' communication with hunters is problematic. Communication is also poor between the authorities and local farmers, who feel excluded from the decision-making process. Farmers believe that the authorities are not acting on their behalf and show a lack of concern. As Conover (2002:366) explains, a demonstration of 'empathy and understanding' by the authorities can reduce tension.

Strong, resilient communities require active participation by local stakeholders in decision-making, taking care that agendas are not hijacked by those with the loudest voices (Carnegie UK Trust, 2007; Richardson, 2011). Participation is not a panacea and poorly applied participatory or empty processes "dominated by policy interests" can have long-term consequences with consultation fatigue and disenchantment as strong possibilities (Fox & Murphy, 2012; Redpath *et al.*, 2013; Stenseke, 2009). Initiatives to improve management with outside facilitation may incur initial costs; however, the benefits of boosting productivity and improved relationships could outweigh long-term costs. Additionally valuable lessons could be learnt in dealing with similar future situations and could lead to better aligned policymaking (Davies & White, 2012; Klugman, 2010)

Conclusion

This research demonstrated that the framework of White *et al.* (2009) is useful for drawing out the factors contributing to the conflict over wild boar management. It revealed that research into

conflicts "will always have to balance global insights and generic guiding principles with local variability and specificity" (O'Rourke 2014:130). Whilst this paper highlighted specific factors for Latvia, common threads run through all conflicts: the need for open, effective dialogue that addresses historical grievances between stakeholders and the need for collaboration between all sectors of a dispute at local levels (Frank, *et al.* 2015). Particular note should be taken of the Soviet legacy of top-down management styles and how mistrust exacerbated this conflict, as this is potentially relevant to other post-Communist countries. Conflicts can bring positive change but are often destructive and costly, undermining effective management, preventing "economic development, social equality, and resource sustainability" (Redpath *et al*. 2013:100), as this research demonstrates.

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